T E C H N I C A L M E M O R A N D U M

Utah Coal Regulatory Program

February 10, 2004

TO: Internal File

THRU: Dana Dean P.E., Environmental Scientist III/Team Lead.

FROM: Wayne H. Western, Environmental Scientist III/Engineering and Bonding.

RE: Refuse Pile Redesign and Post Mining Land Use Change, Plateau Mining Corporation, Willow Creek Mine, C/007/0038, Task ID #1788

SUMMARY:

On December 22, 2003, the Division received an application to modify the refuse pile design because the amount of refuse placed in the refuse pile is less than originally anticipated. The new designs for the refuse pile also contain modifications to the backfilling and grading plan to accommodate an alternative postmining land use. The Permittee is in negotiations with the Price River Water Improvement District to turn over part of the preparation plant area as part of an alternative postmining land use. The PRWID wants the land to expand the water treatment facilities. Part of the alternative postmining land use requires a modification to the existing backfilling and grading plan.

This TA deals mostly with the redesign of the refuse pile although there are some references to the alternative postmining land use change. Most of the issues associated with the postmining land use change are addressed in TA-1797.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The Permittee gave the Division a revised reclamation plan based on the assumption that an alternative postmining land use will be granted for the Willow Creek Mine. The postmining land use change involves the Price River Water Improvement District to purchase part of the disturbed area and build water treatment structures. With the change in the postmining land use the backfilling and grading plan would have to be modified.

The Permittee modified the reclamation plan as if the postmining land use change had been approved. The Division cannot approve a reclamation plan based on that assumption. The Permittee needs to develop two reclamation plans. One plan would be the approved reclamation plan and the other an alternative reclamation plan based on the assumption that some of the disturbed area would be transferred to the PRWID with no significant reclamation work done.

The Division has approved some post mining alternative land uses that appeared to be a sure thing only to see the deal fall through later. To ensure that all disturbed areas can be reclaimed the Division requires that at a viable reclamation plan exist that is not dependant on an alternative postmining land use.

A stand-alone approvable plan could contain a modified design for the refuse pile. The Division realizes that the design of the refuse pile will have to be changed due to a reduction in the amount of materials placed at the site.

Findings:

The information provided by the Permittee is not adequate to meet the requirements of the reclamation section of the regulations. Before approve the Permittee must the Division the following information in accordance with:

R645-301-542 and, R645-301-553: The Permittee must include a viable reclamation plan that is not based on the assumption that part of the disturbed area will be transferred to the Price River Water Improvement District with little or no reclamation work being done. The simplest way to accomplish this is to have two reclamation plans; one plan being based on the current reclamation plan and the other based on the alternative postmining land use.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The approximate original contour requirements are couched in the general backfilling and grading requirements. To help clarify what is needed to achieve AOC the Division wrote Technical Direction 002, Approximate Original Contour Requirements.

The general goal of AOC is to ensure that mined lands closely resemble the pre-mining topography. That does not mean that the pre-mining and postmining contour must be identical rather, the postmining area must blend into the surrounding topography. The three key elements of the AOC plan are:

- All highwalls are eliminated, with the exception of pre-SMCRA highwalls
- All spoil piles are reclaimed.
- The drainage system is compatible with the surrounding area.

The specific AOC requirements have been achieved for both the approved reclamation plan and the alternative postmining land use plan. The reasons for achieving the general AOC are:

- No highwall exist in the area associated with the alternative postmining land use including the refuse pile.
- No spoil piles exist in the area.
- The hydrology requirements will be meet under an approved reclamation plan.

The general requirement that the site blend into the surrounding area is complicated because most of the site was disturbed pre-SMCRA. Large cut slopes were created during pre-SMCRA activities. The cut slopes were made into hills that do not have safety factors of 1.3 or higher. To eliminate the cut slopes, much of the area would have to backfilled to a gentler slope

than the surrounding area. To accomplish those requirements large amounts of fill would have to be imported and there are limitations on where the fill can be placed because of the Price River.

The cut slopes left in the industrial area are associated with roads. The cut slopes are similar to those in the surrounding areas where roads have been constructed. The roads are needed as part of the industrial land use.

Another AOC requirement is that the area be compatible with the postmining land use. The postmining land use does not have to be the same as the pre-mining land use. For the case of a postmining land use as industrial, the Permittee must show that the land would have a higher and better use. In order to approve the postmining land use the Division must make a finding that the land would have a high and better use. That finding will be made in other sections of the TA.

Findings:

The information in the proposed amendment is adequate to meet the minimum requirements of this section of the regulations.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

The general requirements for backfilling and grading are:

- Achieve the approximate original contour.
- Eliminate all highwalls, spoil piles, and depressions.
- Achieve a postmining slope that does not exceed either the angle of repose or such lesser slope as is necessary to achieve a minimum long-term static safety factor of 1.3.
- Minimize erosion and water pollution both on and off the site.
- Support the approved postmining land use.

The Division made the AOC findings in that section of the TA. There are no highwalls, or spoil piles in the area. The major depressions at the site are sediment ponds that will phased out during backfilling and grading. The ponds will be needed for sediment control until

alternative sediment control methods can be established. The alternative sediment control methods include:

- Filtering, silt fences that reduce velocities and trap sediment.
- Surface roughening to trap water and help establish plant growth.
- Surface protection that includes: mulch, nets and vegetation.

The reclaimed slopes will be stable. In Appendix 3.4H of Section 4.0, contains information on slope stability. The slope stability analysis shows that if the slopes in soil are kept at 2H to 1V then they will be stable. None of the slopes shown in the cross-sections exceeds a 2H to 1V slope. Cut slopes in rock have been shown to be stable.

Before bond release, the Division will require that as-built maps and cross-sections be provided along with other engineering data. The Permittee will be required to show that the as-built slopes are stable.

Under the proposed alternative postmining land use plan the refuse pile will be shaped different from the approved design. Under the approved design less than four feet of non-refuse material needs to be placed on the refuse because the upper part is nontoxic and nonacid forming. If acid or toxic materials are uncovered, then the Permittee must bury them either under clean refuse or place four feet of cover over that area. This issue will be addressed in the soils section of the TA.

Findings:

The information in the proposed amendment is considered adequate to meet the minimum requirements of the regulations.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

There are no mine openings associated with the alternative postmining land use or refuse pile.

Findings:

The information in the proposed amendment is considered adequate to meet the minimum requirements of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

Reclamation

All roads within the area proposed for the alternative postmining land use will be retained either because they are needed for access, or to facilitate the alternative postmining land use. All roads not to be retained will be reclaimed according to the approved plan.

Retention

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The Permittee states on Page 3.4-18 the following:

- Primary roads P-1 and P-2 are not only used by the Permittee but also by Utah Power and Light, Helper City, Price City and PRWID.
- Primary roads P-1 and P-2 can be used as secondary escape routes.
- Primary road P-2 and P-5 are used by Utah Power and Light to inspect and repair their power lines in Barn Canyon
- Primary roads P-1, P-2, P-4 and P-5 are needed for the postmining industrial land use.

In order for a road to be retained after reclamation it must meet the following requirements:

- The road must be classified as primary.
- The road must be designed and maintained in accordance with the regulations.
- The road must be needed for an approved postmining land use.

All the roads proposed for retention are classified as primary roads. Those roads were built according to the plans in the MRP, or existed before the area was permitted but meet regulatory requirements. The roads are needed to support the alternative postmining land use.

Findings:

The information in the proposed amendment is considered adequate to meet the minimum requirements of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

Affected Area Boundary Maps

The affected area for the Willow Creek Mine is the same as the permit area. The request for an alternative postmining land use does not change the permit boundaries. The maps do show what the new permit boundaries would be if the alternative postmining land use is approved, Phase III bond released is approved, and the area is removed from the permit area.

Bonded Area Map

The bonded area is the same as the disturbed area. The maps do show what the new bonded area will be when Phase III bond release is granted.

Reclamation Backfilling And Grading Maps

Exhibit 3.4-9 shows the proposed topography for the reclamation of the Preparation Plant under the alternative postmining land use. The map is at a scale of 1" = 200' and was prepared by a P.E.

The cross-sections for the alternative postmining land use area are shown on Exhibit 3.4-10. The cross-sections are 400 feet apart. The Division relies heavy on cross-sections to determine if many of the regulations have been met. The cross-sections should be at least 200 feet apart.

Reclamation Facilities Maps

On Exhibit 3.4-12, the Permittee shows the location of the structures that will remain as part of the alternative postmining land use. Those structures are: 1) bathhouse, 2) substation and 3) various pump houses.

Final Surface Configuration Maps

The final surface configuration for the alternative postmining land use area is shown on Exhibit 3.4-9. The map shows the proposed final surface configuration and was stamped by a P.E.

Reclamation Surface And Subsurface Manmade Features Maps

Exhibit 3.4-9 shows the location of the surface and subsurface manmade features.

Certification Requirements.

The Permittee has met the requirements for map certification.

Findings:

The information provided in the application is not adequate to meet the minimum requirements of the regulations. Before the Division can approve the application, the Permittee must provide the following in accordance with:

R645-301-542.300, The Permittee must give the Division cross-sections for the area proposed for an alternative industrial postmining land use and the redesigned refuse pile at intervals no less than 200 feet apart. When possible the Permittee should include cross-sections at critical points.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of Bond Amount

The Permittee included a modified reclamation cost estimate based on the alternative postmining land use scenario. The Division cannot base the reclamation cost on an alternative postmining land use. The bond estimate must be based on the approved reclamation plan. The Division will allow the bond calculations to be incorporated into the MRP but they cannot replace the existing calculations.

Findings:

The Permittee has met the minimum requirements of this section of the regulations.

RECOMMENDATIONS:

The Division should deny the application until all of the above mentioned deficiencies had been addressed.

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